

Remarks

Claims 1-2, 5-8, and 14-15 are pending in the present application. Claims 1-2, 5, and 14-15 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Durocher et al. (U.S. Pat. No. 6,614,103). Claims 6-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Durocher et al. in view of Deisenhofer et al. (U.S. Pat. App. No. 2002/0179919). In view of the following remarks, reconsideration and withdrawal of these grounds of rejection is requested.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-2, 5, and 14-15 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Durocher et al. For the reasons set forth below, reconsideration and withdrawal of this ground of rejection is respectfully requested.

Claim 1 now recites:

A semiconductor package comprising: an electrically insulating substrate layer; a non-conductive layer disposed on the electrically insulating substrate layer; and, a reflector layer disposed on the non-conductive layer, wherein the electrically insulating substrate layer includes at least one first metallized portion on a first surface thereof and at least one second metallized portion on a second surface thereof, said second surface opposite said first surface, and wherein the reflector layer is made of a material with a coefficient of thermal expansion which is matched to a coefficient of thermal expansion of a material of the electrically insulating substrate layer.

Thus, claim 1 requires a “reflector layer” made of a material with a coefficient of thermal expansion (CTE) which is matched to the CTE of the “electrically insulating layer.” Support for this amendment to claim 1 is found in original dependent claim 8, and in the specification at page 4, Paragraph [0023], for example. Because Durocher fails to disclose, teach or suggest such an

invention, reconsideration and withdrawal of this ground of rejection is respectfully requested.

At pages 2 and 3 of the Office Action, the Examiner asserts that Durocher discloses a “reflector layer” (i.e., carrier 31) and an “electrically insulating layer” (i.e., flexible base 41) which are “both made of plastic.” However, it is noted for the record that the carrier 31 in Durocher is not a “reflector layer,” as that term is defined in the present patent application. As discussed below, the only “reflector layer” arguably disclosed by Durcoher is reflective metal coating 57 (See Fig. 6).

Starting with the assumption that carrier 31 and flexible base 41 are “both made of plastic,” the Examiner reasons that both forms of “plastic” have the same CTE, and thus claim 1 must be anticipated. The Applicant disagrees with this assertion for two reasons: (1) as noted above, Durocher does not disclose, teach or suggest a “reflector layer” made of plastic, (2) even if Durocher did disclose a “reflector layer” made of plastic, there is no disclosure, teaching or suggestion in Durocher to match the CTE of such “reflector layer” to the CTE of an “electrically insulating layer.”

As noted above, Durocher does not disclose, teach or suggest a “reflector layer” made of plastic. The carrier 31 referenced by the Examiner is not in any way reflective. The present specification describes the surface of the “reflector layer” as being coated with metal (e.g., silver, palladium, aluminum), and describes the “reflector layer” function as “to efficiently direct the emitted light from the LED upward... (See, page 4, Paragraph [0023]). The carrier 31 of Durcoher is not made of, or coated with, metal (rather it is made entirely of plastic), and is not effective to reflect light. Accordingly, the carrier 31 of Durcoher cannot comprise a “reflector

layer,” as that term is defined in the present patent application.

Further, as explained at column 7, lines 9-20 of Durocher, the reflective metal coating 57 is made of metal, not plastic (emphasis added). Therefore, it is clear that Durocher does not disclose, teach or suggest a “reflector layer” made of plastic, as the Examiner asserts in the Office Action. For this reason alone, the rejection of independent claim 1 (and dependent claim 2), should be withdrawn.

Moreover, even if Durocher disclosed a “reflector layer” made of plastic (which he most certainly does not), there is no disclosure, teaching or suggestion in Durocher to match the CTE of such “reflector layer” to the CTE of an “electrically insulating layer.” Hence, for this additional reason, reconsideration and withdrawal of the rejection of claim 1, and claim 2 dependent thereon, is respectfully requested.

With respect to independent claim 14, this claim contains the same limitation discussed above with reference to independent claim 1 (i.e., “wherein the reflector layer is made of a material with a coefficient of thermal expansion which is matched to a coefficient of thermal expansion of a material of the electrically insulating substrate layer”). Therefore, for at least those reasons discussed above with reference to claim 1, reconsideration and withdrawal of this ground of rejection with respect to independent claim 14, and claim 15 dependent thereon, is respectfully requested.

Claim Rejections Under 35 U.S.C. § 103

Claims 6-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Durocher et al. in view of Deisenhofer et al. For the reasons set forth below, reconsideration and withdrawal of this ground of rejection is respectfully requested.

As discussed above, Durocher fails to disclose, teach or suggest a “reflector layer” with a CTE matched to the CTE of an “electrically insulating layer,” as recited in independent claim 1, upon which claims 6-8 depend. Accordingly, for at least those reasons discussed above with reference to claim 1, reconsideration and withdrawal of this ground of rejection with respect to claims 6-8 is respectfully requested.

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Conclusion

In view of the foregoing remarks, Applicants submit that this application is in condition for allowance at an early date, which action is earnestly solicited.

Respectfully submitted,



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